

**AUDIO-, VIDEO-, INFORMATSIOONI- JA  
SIDETEHNOLOOGIA SEADMED. OSA 1: OHUTUSNÕUDED**

**Audio/video, information and communication  
technology equipment - Part 1: Safety requirements**

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

See Eesti standard EVS-EN 62368-1:2014 sisaldab Euroopa standardi EN 62368-1:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 62368-1:2014 consists of the English text of the European standard EN 62368-1:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.08.2014.	Date of Availability of the European standard is 01.08.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 33.160.01, 35.020

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ICS 33.160.01; 35.020

English Version

**Audio/video, information and communication technology  
equipment - Part 1: Safety requirements  
(IEC 62368-1:2014 , modified)**

Equipements des technologies de l'audio/vidéo, de  
l'information et de la communication - Partie 1: Exigences  
de sécurité  
(CEI 62368-1:2014 , modifiée)

Einrichtungen für Audio/Video, Informations- und  
Kommunikationstechnik - Teil 1: Sicherheitsanforderungen  
(IEC 62368-1:2014 , modifiziert)

This European Standard was approved by CENELEC on 2014-06-20. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Foreword

The text of document 108/521/FDIS, future edition 2 of IEC 62368-1:2014, prepared by IEC/TC 108 "Safety of electronic equipment within the field of audio/video, information technology and communication technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62368-1:2014.

A draft amendment, which covers common modifications to IEC 62368-1:2014, was prepared by CLC/TC 108X, "Safety of electronic equipment within the fields of Audio/Video, Information Technology and Communication Technology" and approved by CENELEC.

The following dates are fixed:

- latest date by which this document has to be implemented at (dop) 2015-06-20  
national level by publication of an identical  
national standard or by endorsement
- latest date by which the national standards conflicting with this (dow) 2019-06-20  
document have to be withdrawn

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Requirement of sound pressure for personal music player addressed by the mandate M/452 are covered in 10.6 "Safeguards against acoustic energy sources".

For equipment falling within the scope of directives other than those against which this standard is harmonized, additional requirements from those directives may apply.

## Endorsement notice

The text of the International Standard IEC 62368-1:2014 was approved by CENELEC as a European Standard with agreed common modifications.

## COMMON MODIFICATIONS

CONTENTS **Add** the following annexes:

Annex ZA (normative)	Normative references to international publications with their corresponding European publications
Annex ZB (normative)	Special national conditions
Annex ZC (informative)	A-deviations
Annex ZD (informative)	IEC and CENELEC code designations for flexible cords

**Delete** all the “country” notes in the reference document according to the following list:

0.2.1	Note	1	Note 3	4.1.15	Note
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3

For special national conditions, see Annex ZB.

1 **Add** the following note:

NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.

4.Z1 **Add** the following new subclause after 4.9:

To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):

- except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;
- for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;
- it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.

If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.

5.4.2.3.2.4 **Add** the following to the end of this subclause:

The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.

10.2.1 **Add** the following to <sup>c)</sup> and <sup>d)</sup> in Table 39:

For additional requirements, see 10.5.1.

10.5.1 **Add** the following after the first paragraph:

*For RS 1 compliance is checked by measurement under the following conditions:*

*In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.*

NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.

*The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.*

*Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.*

*For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.*

NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.

10.6.2.1 **Add** the following paragraph to the end of the subclause:

EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.

10.Z1 **Add** the following new subclause after 10.6.5.

#### **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz**

The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).

For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566

G.7.1 **Add** the following note:

NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.

Bibliography **Add** the following standards:

**Add** the following notes for the standards indicated:

IEC 60130-9	NOTE Harmonized as EN 60130-9.
IEC 60269-2	NOTE Harmonized as HD 60269-2.
IEC 60309-1	NOTE Harmonized as EN 60309-1.
IEC 60364	NOTE some parts harmonized in HD 384/HD 60364 series.
IEC 60601-2-4	NOTE Harmonized as EN 60601-2-4.
IEC 60664-5	NOTE Harmonized as EN 60664-5.
IEC 61032:1997	NOTE Harmonized as EN 61032:1998 (not modified).
IEC 61508-1	NOTE Harmonized as EN 61508-1.
IEC 61558-2-1	NOTE Harmonized as EN 61558-2-1.
IEC 61558-2-4	NOTE Harmonized as EN 61558-2-4.
IEC 61558-2-6	NOTE Harmonized as EN 61558-2-6.
IEC 61643-1	NOTE Harmonized as EN 61643-1.
IEC 61643-21	NOTE Harmonized as EN 61643-21.
IEC 61643-311	NOTE Harmonized as EN 61643-311.
IEC 61643-321	NOTE Harmonized as EN 61643-321.
IEC 61643-331	NOTE Harmonized as EN 61643-331.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Safety of Toys – Part 1: Mechanical and physical properties	EN 71-1	-
		Sound system equipment: Headphones and earphones associated with personal music players — Maximum sound pressure level measurement methodology— Part 1: General method for "one package equipment"	EN 50332-1	-
		Sound system equipment: Headphones and earphones associated with personal music players — Maximum sound pressure level measurement methodology— Part 2: Matching of sets with headphones if either or both are offered separately, or are offered as one package equipment but with standardised connectors between the two allowing to combine components of different manufacturers or different design	EN 50332-2	-
		Product standard to demonstrate the compliance of mobile phones with the basic restrictions related to human exposure to electromagnetic fields (300 MHz - 3 GHz)	EN 50360	-
-	-	Insulating, sheathing and covering materials for low-voltage energy cables	EN 50363	(all parts)
-	-	Electrical test methods for low voltage energy cables	EN 50395	2005
-	-	Non electrical test methods for low voltage energy cables	EN 50396	2005
		General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) -- Part 3: Electrical safety requirements.	EN 50491-3	2009
		Product standard to demonstrate compliance of radio frequency fields from handheld and body-mounted wireless communication devices used by the general public (30 MHz - 6 GHz)	EN 50566	-
IEC 60027-1	-	Letter symbols to be used in electrical technology – Part 1: General	EN 60027-1	-



<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60065	-	Audio, video and similar electronic apparatus – Safety requirements	EN 60065	-
IEC 60068-2-6	-	Environmental testing Part 2-6: Tests – Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-78	-	Environmental testing Part 2-78: Tests – Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC/TR 60083	-	Plugs and socket-outlets for domestic and similar general use standardised in member countries of IEC	-	-
IEC 60085	-	Electrical insulation – Thermal classification and designation	EN 60085	-
IEC 60086-4	-	Primary batteries – Part 4: Safety of lithium batteries	EN 60086-4	-
IEC 60107-1	1997	Methods of measurement on receivers for television broadcast transmissions – Part 1: General considerations - Measurements at radio and video frequencies	EN 60107-1	1997
IEC 60112	-	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	-
IEC 60127	(all parts)	Miniature fuses	EN 60127	(all parts)
IEC 60227-1	-	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V – Part 1: General requirements	HD 21 <sup>1)</sup>	-
IEC 60227-2	2003	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V – Part 2: Test methods	HD 21 <sup>1)</sup>	-
IEC 60245-1	-	Rubber insulated cables – Rated voltages up to and including 450/750V – Part 1: General requirements	HD 22 <sup>2)</sup>	-
IEC 60309	(all parts)	Plugs, socket-outlets and couplers for industrial purposes	EN 60309	(all parts)
IEC 60317	(all parts)	Specifications for particular types of winding wires	EN 60317	(all parts)
IEC 60317-43	-	Part 43: Aromatic polyimide tape wrapped round copper wire, class 240	EN 60317-43	-
IEC 60320	(all parts)	Appliance couplers for household and similar general purposes	EN 60320	(all parts)

<sup>1)</sup> The HD 21 series is related to, but not directly equivalent with the IEC 60227 series. Also EN 50363, EN 50395 and EN 50396 are to be taken into account.

<sup>2)</sup> The HD 22 series is related to, but not directly equivalent with the IEC 60245 series. Also EN 50363, EN 50395 and EN 50396 are to be taken into account.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60320-1	-	Appliance couplers for household and similar general purposes – Part 1: General requirements	EN 60320-1	-
IEC 60320-2-2	-	Appliance couplers for household and similar general purposes – Part 2-2: Interconnection couplers for household and similar equipment	EN60320-2-2	-
IEC 60332-1-2	-	Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame	EN 60332-1-2	-
IEC 60332-1-3	-	Tests on electric and optical fibre cables under fire conditions – Part 1-3: Test for vertical flame propagation for a single insulated wire or cable - Procedure for determination of flaming droplets/particles	EN 60332-1-3	-
IEC 60332-2-2	-	Tests on electric and optical fibre cables under fire conditions – Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable - Procedure for diffusion flame	EN 60332-2-2	-
IEC 60384-14	2005	Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2005
IEC 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	-	Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	-
IEC 60691	2002	Thermal-links - Requirements and application guide	EN 60691	2003
IEC 60695-10-2	-	Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test	EN 60695-10-2	-
IEC 60695-10-3	-	Fire hazard testing – Part 10-3: Abnormal heat – Mould stress relief distortion test	EN 60695-10-3	-
IEC 60695-11-5	2004	Fire hazard testing – Part 11-5: Test flames – Needle flame test methods – Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60695-11-10	-	Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods	EN 60695-11-10-	-
IEC 60695-11-20	1999	Fire hazard testing – Part 11-20: Test flames – 500 W flame test methods	EN 60695-11-20	1999
IEC/TS 60695-11-21	-	Fire hazard testing – Part 11-21: Test flames – 500 W vertical flame test methods for tubular polymeric materials	-	-
IEC 60728-11 (mod)	2005	Cable networks for television signals, sound signals and interactive services – Part 11: Safety	EN 60728-11	2005
IEC 60730	(all parts)	Automatic electrical controls for household and similar use	EN 60730	(all parts)
IEC 60730-1 (mod)	2010	Automatic electrical controls for household and similar use – Part 1: General requirements	EN 60730-1	2011
IEC 60738-1 +A1	2006 2009	Thermistors – Directly heated positive temperature coefficient – Part 1: Generic specification	EN 60738-1 +A1	2006 2009
IEC 60747-5-5	2007	Semiconductor devices – Discrete devices Part 5-5: Optoelectronic devices – Photocouplers	EN 60747-5-5	2011
IEC 60825-1	2007	Safety of laser products – Part 1: Equipment classification and requirements	EN 60825-1	2007
IEC 60825-2	2004	Safety of laser products – Part 2: Safety of optical fibre communication systems (OFCS)	EN 60825-2	2004
IEC 60825-12	-	Safety of laser products – Part 12: Safety of free space optical communication systems used for transmission of information	EN 60825-12	-
IEC 60851-3	2009	Winding wires – Test methods – Part 3: Mechanical properties	EN 60851-3	2009
IEC 60851-5	2008	Winding wires – Test methods – Part 5: Electrical properties	EN 60851-5	2008
IEC 60851-6	1996	Winding wires – Test methods – Part 6: Thermal properties	EN 60851-6	1996
IEC 60896-11	-	Stationary lead-acid batteries – Part 11: Vented types – General requirements and methods of tests	EN 60896-11	-
IEC 60896-21	2004	Stationary lead-acid batteries – Part 21: Valve regulated types –Methods of test	EN 60896-21	2004
IEC 60896-22	-	Stationary lead-acid batteries – Part 22: Valve regulated types – Requirements	EN 60896-22	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60906-1	-	IEC System of plugs and socket-outlet for household and similar purposes – Part 1: Plugs and socket-outlets 16 A 250 V a.c.	-	-
IEC 60906-2	-	IEC System of plugs and socket-outlet for household and similar purposes – Part 2: Plugs and socket-outlets 15 A 125 V a.c.	-	-
IEC 60947-1	-	Low-voltage switchgear and controlgear – Part 1: General rules	EN 60947-1	-
IEC 60950-1 (mod)	2005	Information technology equipment – Safety – Part 1: General requirements	EN 60950-1	2006
IEC 60950-22	2005	Information technology equipment – Safety – Part 22: Equipment to be installed outdoors	EN 60950-22	2006
IEC 60950-23	-	Information technology equipment – Safety – Part 23: Large data storage equipment	EN 60950-23	-
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 60998-1	-	Connecting devices for low-voltage circuits for household and similar purposes – Part 1: General requirements	EN 60998-1	-
IEC 60999-1	-	Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm <sup>2</sup> up to 35 mm <sup>2</sup> (included)	EN 60999-1	-
IEC 60999-2	-	Connecting devices – Electrical copper conductors 470 – Safety requirements for screw-type and screwless-type clamping units – Part 2: Particular requirements for clamping units for conductors above 35 mm <sup>2</sup> up to 300 mm <sup>2</sup> (included)	EN 60999-2	-
IEC 61051-1		Varistors for use in electronic equipment – Part 1: Generic specification		
IEC 61051-2 A1	1991 2009	Varistors for use in electronic equipment – Part 2: Sectional specification for surge suppression varistors	-	-
IEC 61056-1	-	General purpose lead-acid batteries (valve-regulated types) – Part 1: General requirements, functional characteristics - Methods of test	EN 61056-1	-
IEC 61056-2	-	General purpose lead-acid batteries (valve-regulated types) – Part 2: Dimensions, terminals and marking	EN 61056-2	-
IEC 61058-1 (mod) +A1	2000 2001	Switches for appliances Part 1: General requirements	EN 61058-1	2002
+A2	2007		+A2	2008

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61140	2001	Protection against electric shock – Common aspects for installation and equipment	EN 61140	2002
IEC/TS 61201	2007	Use of conventional touch voltage limits – Application guide	-	-
IEC 61204-7	-	Low-voltage power supplies, d.c. output – Part 7: Safety requirements	EN 61204-7	-
IEC 61293	-	Marking of electrical equipment with ratings related to electrical supply – Safety requirements	EN 61293	-
IEC 61427	-	Secondary cells and batteries for Photovoltaic energy systems (PVES) – General requirements and methods of test	EN 61427	-
IEC/TS 61430	-	Secondary cells and batteries – Test methods for checking the performance of devices designed for reducing explosion hazards – Lead-acid starter batteries	-	-
IEC 61434	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Guide to designation of current in alkaline secondary cell and battery standards	EN 61434	-
IEC 61558-1	2005	Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests	EN 61558-1	2005
IEC 61558-2-16	-	Safety of power transformers, reactors, power supply units and similar products for voltages up to 1 100 V – Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units	EN 61558-2-16	-
IEC 61643-11	-	Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and test methods	-	-
IEC 61810-1	2008	Electromechanical elementary relays – Part 1: General and safety requirements	EN 61810-1	2008
IEC 61959	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Mechanical tests for sealed portable secondary cells and batteries	EN 61959	-
IEC 61965	2003	Mechanical safety of cathode ray tubes	EN 61965	2003
IEC 61984	-	Connectors – Safety requirements and tests	EN 61984	-
IEC 62133	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications	EN 62133	-
IEC 62281	-	Safety of primary and secondary lithium cells and batteries during transport	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62471 (mod)	2006	Photobiological safety of lamps and lamp systems	EN 62471	2008
IEC/TR 62471-2	-	Photobiological safety of lamps and lamp systems – Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety	-	-
IEC 62485-2	-	Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries	-	-
ISO 178	-	Plastics - Determination of flexural properties	EN ISO 178	-
ISO 179-1	-	Plastics - Determination of Charpy impact properties – Part 1: Non-instrumented impact test	EN ISO 179	-
ISO 180	-	Plastics - Determination of Izod impact strength	EN ISO 180	-
ISO 306	-	Plastics – Thermoplastic materials – Determination of Vicat softening temperatures (VST)	EN ISO 306	-
ISO 527	(all parts)	Plastics – Determination of tensile properties	EN ISO 527	(all parts)
ISO 871	-	Plastics – Determination of ignition temperature using a hot-air furnace	-	-
ISO 3864	(all parts)	Graphical symbols -- Safety colours and safety signs	-	-
ISO 3864-2	-	Graphical symbols – Safety colours and safety signs – Part 2: Design principles for product safety labels	-	-
ISO 4892-1	-	Plastics – Methods of exposure to laboratory light sources – Part 1: General guidance	EN ISO 4892-1	-
ISO 4892-2	2006	Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc lamps	EN ISO 4892-2	2006
ISO 4892-4	-	Plastics – Methods of exposure to laboratory light sources – Part 4: Open-flame carbon-arc lamps	-	-
ISO 7000	Data-base	Graphical symbols for use on equipment – Index and synopsis	-	-
ISO 7010	-	Graphical symbols – Safety colours and safety signs – Safety signs used in workplaces and public areas	EN ISO 7010	-
ISO 8256	-	Plastics - Determination of tensile-impact strength	EN ISO 8256	-
ISO 9772	-	Cellular plastics - Determination of horizontal burning characteristics of small specimens subjected to a small flame	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 9773	-	Plastics - Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source	EN ISO 9773	-

## Annex ZB (normative)

### Special National Conditions

**Special national condition:** National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonisation, it forms part of the European Standard.

For the countries in which the relevant special national apply these provisions are normative, for other countries they are informative.

Clause	Special national condition
<b>4.1.15</b>	<p><b>Denmark, Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p><b>Class I pluggable equipment type A</b> intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and <b>accessible</b> parts, have a marking stating that the equipment shall be connected to an earthed <b>mains</b> socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>
<b>4.7.3</b>	<p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>
<b>5.2.2.2</b>	<p><b>Denmark</b></p> <p>After the 2nd paragraph add the following:</p> <p>A warning (marking <b>safeguard</b>) for high <b>touch current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>
<b>5.4.11.1 and Annex G</b>	<p><b>Finland and Sweden</b></p>



Clause	Special national condition
	<p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>• two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <li>• passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>• the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> </ul> <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p>
5.5.2.1	<p><b>Norway</b></p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>
5.5.6	<p><b>Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation</b> in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.</p>
5.6.1	<p><b>Denmark</b></p>

Clause	Special national condition
	<p><b>Add</b> to the end of the subclause</p> <p>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.</p> <p><i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>
5.6.4.2.1	<p><b>Ireland and United Kingdom</b></p> <p>After the indent for <b>pluggable equipment type A</b>, the following is added:</p> <ul style="list-style-type: none"> <li>– the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains</b> plug.</li> </ul>
5.6.5.1	<p>To the second paragraph the following is added:</p> <p>The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is:</p> <p>1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> in cross-sectional area.</p>
5.7.5	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>

Clause	Special national condition
<b>5.7.6.1</b>	<p><b>Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:</p> <p>“Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”</p>
<b>5.7.6.2</b>	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>

Clause	Special national condition
<b>B.3.1 and B.4</b>	<p><b>Ireland and United Kingdom</b></p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b>, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the <b>direct plug-in equipment</b>, until the requirements of Annexes B.3.1 and B.4 are met</p>
<b>G.4.2</b>	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>
<b>G.4.2</b>	<p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>

Clause	Special national condition
<b>G.7.1</b>	<p><b>United Kingdom</b></p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>
<b>G.7.1</b>	<p><b>Ireland</b></p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>
<b>G.7.2</b>	<p><b>Ireland and United Kingdom</b></p> <p>To the first paragraph the following is added:</p> <p>A power supply cord with a conductor of 1,25 mm<sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>

## Annex ZC (informative)

### A-deviations

**A-deviation:** National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC national member.

This European Standard falls under Directive 2006/95/EC.

NOTE (from CEN/CENELEC IR Part 2:2011, 2.17): Where standards fall under EU Directives, it is the view of the Commission of the European Communities (OJ No C 59; 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.

A-deviations in an EFTA-country are **valid instead** of the relevant provisions of the European Standard in that country until they have been removed.

Add the following A-deviations:

Clause	National deviation
10.5.2	<p><b>Germany</b></p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p><b>NOTE</b> Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p>

Clause	National deviation
F.1	<p><b>Italy</b></p> <p>The following requirements shall be fulfilled:</p> <ul style="list-style-type: none"> <li>The power consumption in Watts (W) shall be indicated on TV receivers and in their instruction for use (Measurement according to EN 60555-2). Note/Nota <i>EN 60555-2 has since been replaced by IEC 60107-1:1997.</i></li> <li>TV receivers shall be provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language.</li> <li>Marking for controls and terminals shall be in Italian language. Abbreviation and international symbols are allowed provided that they are explained in the instruction for use.</li> <li>The ECC manufacturers are bound to issue a conformity declaration according to the above requirements in the instruction manual. The correct statement for conformity to be written in the instruction manual, shall be: <i>Questo apparecchio è fabbricato nella CEE nel rispetto delle disposizioni del D.M. marzo 1992 ed è in particolare conforme alle prescrizioni dell'art. 1 dello stesso D.M.</i></li> <li>The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the following form: D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT S for stereo T for Teletext pT for retrofitable teletext</li> </ul> <p><i>Justification:</i> Ministerial Decree of 26 March 1992 : National rules for television receivers trade.</p> <p>NOTE/NOTA: <i>Ministerial decree above contains additional, but not safety relevant requirements</i></p>

**Annex ZD**  
(informative)

**IEC and CENELEC code designations for flexible cords**

Type of flexible cord	Code designations	
	IEC	CENELEC
<b>PVC insulated cords</b>		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F
<b>Rubber insulated cords</b>		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
<b>Cords having high flexibility</b>		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H
<b>Cords insulated and sheathed with halogen-free thermoplastic compounds</b>		
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F



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